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Resolution Chart

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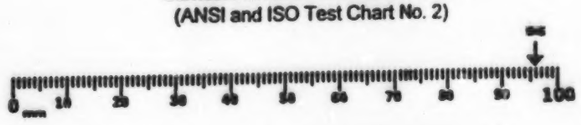
National Bureau of Standards
Standard Reference Material 1010a
(ANSI and ISO Test Chart No. 2)



PM-1 3½"x4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

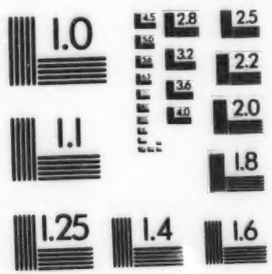


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Tableau de résolution

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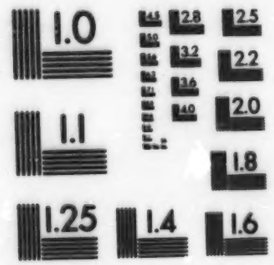

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Well Water Fact Sheet
Office of the Chief Medical Officer of Health
Manitoba Health
March 2001

How do I test my well water for bacterial contamination?

There are a number of accredited and non-accredited laboratories that are capable of carrying out bacteriological testing. It is recommended that the bacterial analysis of drinking water samples be carried out by an accredited laboratory. They should provide you with sample bottles, forms and proper instructions for sampling. Contact your local Manitoba Conservation Office (listed at the end of this fact sheet) for the accredited lab nearest you.

Who collects the sample?

You, as the well owner, are responsible for collecting the sample. Carefully follow the instructions provided by the laboratory and get your sample to the laboratory within 24 hours of collection.

What do I need to test for?

You need to test for coliform bacteria in the water to find out if your well may be contaminated by bacterial germs. The standard bacteriological tests for private wells are called the total coliform (TC) test, the fecal coliform test or the E. coli test. (If you have an infant under one year of age it is also recommended that you test for nitrate. This requires a separate water sample.)

Where do I get sample bottles and analysis request forms?

Bottles for water testing may be obtained from a laboratory as well as from the offices of Manitoba Conservation or The Manitoba Water Services Board. Some municipal offices may provide bottles to residents within their jurisdictions.

How do I take the sample?

If proper sampling procedures are not followed, it is very likely that the sample will be contaminated and produce falsely elevated total coliform counts, resulting in needless anxiety, re-testing and/or chlorination of wells.

Before taking your sample, it is important that the following steps be taken:

1) Select a sampling point that is as close as possible to the well being tested to minimize the risk of sample contamination. The sample point should be on an often-used run of pipe and easily accessible to facilitate proper testing.

2) Many homes and businesses are equipped with water treatment devices. **These devices must be bypassed, removed or disconnected or the sample taken before the water enters the device.** This includes point-of-entry devices such as softeners, carbon filters, and iron removal filters. Also included are point-of-use devices, both tap-mounted and under-sink (including sediment filters), RO units and ceramic filters.

3) Samples should always be taken directly from the supply, not from garden hoses or other containers such as dippers.

4) Remove the aerator (screen) from the end of the tap. These are frequently contaminated. Flame the end of the tap very briefly with a lighter (**use caution:** plastic components can be damaged by heat) or wash with a strong disinfectant solution. (Use 2 teaspoons of regular household bleach in one litre of water or 1:100 ratio).

5) Samples must be taken using sterile bottles provided by the laboratory, Manitoba Conservation or The Manitoba Water Services Board offices listed at the end of this fact sheet.

6) Allow water from taps or pumps to flow two to three minutes before taking sample.

7) Carefully remove cap of sample bottle, leaving protective wrapper on. Hold cap and protective wrapper in hand while bottle is being filled. Do not lay cap down or touch inside of cap.

8) Fill bottle to the level indicated by the laboratory. **Do not rinse bottle** as it contains chemical agent required for the test.

9) **Keep samples cool** (covered and in a cool place, such as a refrigerator) and submit samples to laboratory within 24 hours of collection. Samples that are allowed to get too warm cannot be analyzed as they will produce inaccurate test results.

10) If more than one test is required, please submit additional bottle(s), one bottle per test.

11) Do not use bottle if seal is broken.

12) The sterile sample bottle is not suitable for chemical tests.

Where, when and how do I submit the sample?

Bacterial testing is time sensitive. Samples should arrive at the laboratory within 24 hours from the time of sampling. If you are not delivering the sample yourself, a pick-up courier service from the bus depot is provided by some laboratories. The submission form must be completed as instructed and should accompany the sample.

What do the results of the test tell me?

Bacteriological tests look for the presence of bacteria (that indicate contamination) such as total coliforms, fecal coliforms and E. coli. Coliform bacteria occur naturally in soil and in the intestines of humans and animals. Their presence in water may indicate soil or sewage contamination. Possible causes include surface water infiltration or seepage from a septic system. E. coli is one kind of fecal coliform that is normally present only in the intestines of humans and animals. The presence of E. coli in water indicates definite fecal (sewage) pollution. Most types of E. coli do not cause human illness. E. coli O157 (which was found in Walkerton) is one specific type of E. coli which can cause serious illness.

When a sample is reported as bacteriologically safe to drink, it means that coliform bacteria were not found in the sample. The absence of coliform bacteria indicates the absence of E. coli bacteria and other disease-causing bacteria.

Generally, a well should remain clean and free of bacteria if the well is secure and maintained properly.

When a sample is reported as unsafe to drink or in need of re-testing, it probably means that coliform bacteria were found in your sample. This may indicate that the well water is contaminated.

What should I do if the test results indicate the presence of bacteria?

The presence of coliform bacteria indicates that the water could be unsafe to drink. As a precautionary measure, the water should be brought to a rolling boil prior to consumption. A second sample may be required to confirm the first result. Be sure to use the proper sampling procedure to avoid accidental contamination of the sample. If you have an abnormal result, it is recommended that you contact your local health inspector for further advice.

E. coli, or other fecal coliforms, only appear in water samples recently contaminated by fecal (sewage) matter. They indicate the possible presence of disease-causing bacteria, viruses or protozoa. Water containing E. coli or other fecal coliforms is not safe to drink and corrective action should be taken promptly. Information about well disinfection is available in the Well Water Fact Sheet titled "How Do I Disinfect My Well?"

Drinking Water Fact Sheets

- How Do I Know If My Well Water Is Safe from bacterial contamination?
- How Do I Test My Well Water for Bacterial Contamination?
- What Do I Do When a Boil Water Advisory is Issued?
- How Do I Disinfect My Well?
- Guidelines for Food Establishments During a Boil Water Advisory

Where can I get more information?

For further information on well water safety, please contact the nearest office of Manitoba Conservation or The Manitoba Water Services Board at the numbers listed on this fact sheet, or call Health Links at 788-8200 or toll-free 1-888-315-9257.

Manitoba Conservation

Winnipeg	204-945-0675
Fax	204-945-1211
Brandon	204-726-6064
Fax	204-726-6567
Virden	204-748-2321
Fax	204-748-2388
Steinbach	204-346-6060
Fax	204-326-2472
Selkirk	204-785-5030
Fax	204-785-5024
Lac du Bonnet	204-345-1447
Fax	204-345-1415
Flin Flon	204-687-1625
Fax	204-687-1623
The Pas	204-627-8307
Fax	204-623-1773
Killarney	204-523-5285
Fax	204-523-4626
Dauphin	204-622-2030
Fax	204-622-2306
Swan River	204-734-3436
Fax	204-734-5151
Winkler	204-325-1750
Fax	204-325-1758
Portage la Prairie	204-239-3188
Fax	204-239-3185
Thompson	204-677-6704
Fax	204-677-6652

The Manitoba Water Services Board

Brandon	204-726-6079
Fax	204-726-6290
Dauphin	204-622-2116
Fax	204-622-2298
Beausejour	204-268-6059
Fax	204-268-6060

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Information Compiled by the Drinking Water Coordinating Group